INTELLEC® 4/MOD 40
MICROCOMPUTER DEVELOPMENT SYSTEM

- **Complete hardware/software development system for the design and implementation of 4040 CPU based microcomputer systems.**
- **TTY interface, front panel designer's console, and high speed paper-tape reader interface, in conjunction with PROM resident system monitor provide complete program loading, punching, monitoring, interrogation, and alteration capabilities.**
- **Program RAM (4K 8-bit bytes) provides a program development medium which lends itself to rapid and facile program monitoring and alteration.**
- **Data RAM (320 4-bit bytes expandable to 2560 bytes) provides data storage capacity.**
- **Program PROM (expandable to 4K 8-bit bytes) in conjunction with the resident PROM programmer provide capability of simulating final ROM resident program.**
- **PROM resident system monitor, RAM resident assembler with edit feature included in standard systems software.**
- **Includes such standard program development features as program single step, address search (and pass count), next instruction indication, program flow verification.**
- **I/O expandable to 16 4-bit input ports and 48 4-bit output ports (all TTL compatible) allowing "hands-on" simulation of entire user system (processor and peripheral devices).**
- **RESET, STOP, INTERRUPT control signals available to user via back panel.**
- **Modular design with expansion capability provided for up to eleven optional or user designed modules.**

The Intellec 4/MOD 40 (imm 4-44A) is a complete, self-contained microcomputer development system designed specifically to support the development and implementation of 4040 CPU based microcomputer systems. Its modular design provides the flexibility to adapt to any size user system and the resident software facilitates program development.

The basic Intellec 4/MOD 40 Microcomputer Development System consists of 4 microcomputer modules (CPU, RAM, MEMORY CONTROL, and PROM PROGRAMMER), power supplies, I/O connectors, console, and displays. The heart of the system is the imm 4-43 central processor module built around Intel's high performance 4-bit 4040 CPU. The imm 4-43 is a complete microcomputer system containing the system clock, 1K 8-bit bytes of PROM memory, 320 4-bit bytes of data RAM memory, 3 4-bit input ports and 8 4-bit output ports. The imm 6-28 program RAM memory module contains a 4K x 8 memory array composed of Intel 2102 static random access memory elements. The imm 4-72 control module contains the circuitry required to interface the central processor module to the program RAM module. The imm 6-76 PROM programmer module provides the capability of programming Intel 1702A PROMs in conjunction with the front panel PROM socket and system monitor. All I/O ports are TTL compatible and accessible from the back panel 37-pin connectors. The front panel designer's console provides a means of monitoring and controlling system operation.

The Intellec® modular design allows great design system flexibility. Program PROM can be expanded to 4K 8-bit bytes using imm 6-26 or imm 4-22 optional modules. Data RAM can be expanded to 2560 4-bit bytes using imm 4-24 modules. I/O capability can be expanded to 16 4-bit input and 48 4-bit output ports using optional imm 4-60 and 4-24 modules. The universal prototype card (imm 6-70) in conjunction with the eleven optional card sockets (which contain all essential system signals) provide the capability for interfacing custom designed modules.

The user RESET IN/OUT, STOP/STOP ACKNOWLEDGE, and INTERRUPT/INTERRUPT ACKNOWLEDGE control signals are all available at the back panel. Hence, the user can interrupt, halt, and reset the resident CPU via his own interface.

Program interrogation and alteration can be accomplished by using any desired combination of the front panel designer's console, a teletype, the imm 4-90 high speed paper tape reader, and other Intellec compatible peripherals. The front panel designer's console provides the capability of manually writing data into memory and displaying memory contents, monitoring CPU bus contents during each processor subcycle, "freezing" system status after executing of a predefined instruction after a specified number of passes, single-stepping the program and verifying program flow. The teletype and reader serve as vehicles to input and output paper tapes and execute the system monitor.